WE CLAIM:

1. A method for the orientation of a spindle of a numerically controlled and rapidly rotating spindle by which said spindle is brought from an initial rotational speed into a predetermined position of rest, the method comprising:

performing a first phase of orientation of said spindle by braking said spindle to a threshold rotational speed, wherein during said braking a switching over to a position controller is prepared, said switching over is performed at a switching time during a transition from said first phase of orientation to a second phase of orientation, said switching over is continuous in regard to position and/or rotational speed, and wherein a rotational speed of said spindle drops strictly monotonically; and

performing said second phase of orientation of said spindle so that a predetermined position of rest for said spindle is controlled by said position controller from said switching time until said predetermined position of rest of said spindle has been reached in said second phase at a position time.

2. The method for spindle orientation in accordance with claim 1, wherein said braking is performed with a maximally possible current of an electronic drive unit that drives said spindle.

3. The method for spindle orientation in accordance with claim 2, wherein said maximally possible current is preset by a monitoring unit.

4. The method for spindle orientation in accordance with claim 3, wherein said monitoring unit monitors a temperature of a spindle drive unit and limits a

current of said spindle drive unit when overheating is threatened.

5. The method for spindle orientation in accordance with claim 3, wherein said monitoring unit monitors a temperature of an electronic drive unit and limits a current of said electronic drive unit when overheating is threatened.

6. The method for spindle orientation in accordance with claim 1, wherein said braking is performed by presetting a small nominal rotational speed clearly below said threshold rotational speed is preset in a rotational speed controller.

7. The method for spindle orientation in accordance with claim 6, wherein said nominal rotational speed is zero.

8. The method for spindle orientation in accordance with claim 1, wherein a second threshold rotational speed above said threshold rotational speed is selected in such a way that a time period passes between reaching said second threshold rotational speed and reaching said threshold rotational speed, which permits preparation of said switching over to said position controller, continuous in regard to said position or said rotational speed, from rotational speed regulation to position regulation.

9. The method for spindle orientation in accordance with claim 8, wherein within said time period at least two actual position values and/or rotational speed values are determined, which permit an extrapolation of a position and/or rotational speed of said spindle at said switching time from rotational speed regulation

to position regulation.

10. The method for spindle orientation in accordance with claim 1, wherein said second phase nominal position values are preset in said position controller in such a way that a jerk-limited approach to said predetermined position of rest is caused.

11. The method for spindle orientation in accordance with claim 10, wherein a maximum jerk for said jerk-limited approach of said predetermined position of rest is preset.

12. A method for the orientation of a spindle of a numerically controlled and rapidly rotating spindle by which said spindle is brought from an initial rotational speed into a predetermined position of rest, the method comprising:

performing a first phase of orientation of said spindle by braking said spindle to a threshold rotational speed, wherein during said braking a switching over to a position controller is prepared, said switching over is performed at a switching time during a transition from said first phase of orientation to a second phase of orientation, said switching over is continuous in regard to position and/or rotational speed, and wherein a rotational speed of said spindle drops strictly monotonically; and

performing said second phase of orientation of said spindle so that a predetermined position of rest for said spindle is controlled by said position controller from said switching time until said predetermined position of rest of said spindle has been reached in said second phase at a position time. wherein a second

threshold rotational speed above said threshold rotational speed is selected in such a way that a time period passes between reaching said second threshold rotational speed and reaching said threshold rotational speed, which permits preparation of said switching over to said position controller, continuous in regard to said position or said rotational speed, from rotational speed regulation to position regulation;

wherein a second threshold rotational speed above said threshold rotational speed is selected in such a way that a time period passes between reaching said second threshold rotational speed and reaching said threshold rotational speed, which permits preparation of said switching over to said position controller, continuous in regard to said position or said rotational speed, from rotational speed regulation to position regulation; and

wherein said method is only applied if said initial rotational speed lies above said second threshold rotational speed.

13. The method for spindle orientation in accordance with claim 10, wherein within said time period at least two actual position values and/or rotational speed values are determined, which permit an extrapolation of the position and/or rotational speed of said spindle at said switching time from rotational speed regulation to position regulation.